

IN THE CLAIMS

Claims pending:

- At time of the Action: 1-14 and 18-45
- After this Response: 1-14 and 18-45

Currently Amended claims: None

Canceled or Withdrawn claims: None

This listing of claims replaces all prior versions and listings:

1. (Previously Presented) A method comprising:
 - receiving an instruction to open an eXtensible Markup Language (XML) document;
 - searching the XML document to locate a processing instruction (PI) containing a href attribute that points to a URL;
 - discovering a solution using the URL in the PI;
 - opening the XML document with the solution, wherein:
 - the solution includes an extensible stylesheet language (XSLT) presentation application and a XML schema;
 - the XML document can be inferred from the XML schema; and
 - portions of the XML document are logically coupled with fragments of the XML schema;
 - executing the XSLT presentation application to render a Hypertext Markup Language (HTML) electronic form containing data-entry fields associated with the coupled portions;
 - receiving, through one or more of the data-entry fields, data input by a user;
 - validating the data input by the user with one or more of a plurality of validation rules, each of the one or more plurality of validation rules corresponding to one of said data-entry fields through which data is input by the user, each said validation rule:
 - mapping to each said validation rule's corresponding said data-entry

field by use of an entity selected from the group consisting of: an XPath expression; a declarative syntax; and an entity that is script-based; and

mapping to said coupled portion to which each said validation rule's corresponding said data-entry field is associated, the mapping with an entity selected from the group consisting of: an XPath expression; an event handler; an event handler that determines when a real-time validation tool uses said validation rule; an event handler that determines when a real-time validation tool uses said validation rule before data received for said coupled portion is held by the XML document; and an event handler that determines when a real-time validation tool uses said validation rule after data received for said coupled portion is held by the XML document, and if the act of validating determines that the data input by the user is invalid, outputting indicia informing the user that the data input is invalid.

2. (Original) The method as defined in Claim 1, wherein one or more of the receiving, the searching, the examining, the discovering, the opening, and the executing of the XSLT presentation application are performed by the execution of an HTML electronic forms application that is different from the application used to create the HTML electronic form.

3. (Original) The method as defined in Claim 1, wherein:
the executing the XSLT presentation application comprises applying an XSLT stylesheet to the XML document to create the HTML electronic form; and
the HTML electronic form includes a plurality of HTML elements corresponding to the data-entry fields.

4. (Original) The method as defined in Claim 1, wherein:
the searching the XML document further comprises finding the first PI in
the XML document; and
the first PI in the XML document includes the URL.

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5. (Previously Presented) The method as defined in Claim 1, wherein the
solution further comprises a manifest of all files that can be used for:
representing the XML document in the HTML electronic form;
allowing the user to input data into the data-entry fields; and
10 the act of validating the data that the user inputs into the data-entry fields.

6. (Original) The method as defined in Claim 1, wherein the coupled portions
contain information setting forth all possible XML documents for the coupled
portions.

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7. (Previously Presented) The method as defined in 1, wherein the data-entry
fields of the HTML electronic form map to a corresponding plurality of nodes in
said coupled portions of the XML document; and the data input is input for storage
in a corresponding said node in the XML document, and

20 further comprising outputting data in XML for viewing by the user in the
HTML electronic form through the data-entry fields via the mapping of the data-
entry fields from corresponding said nodes in said coupled portions of the XML
document.

25 8. (Previously Presented) The method as defined in Claim 1, wherein the
XML schema includes a logic application and the act of validating executes the
logic application.

9. (Previously Presented) The method as defined in Claim 1, wherein the act of validating uses each said validation rule to:

determine if the data received by input from the user into a corresponding said data-entry field is valid or invalid; and

5 require the user to correct any data input into the corresponding said data-entry field that the validation determines to be invalid.

10. (Previously Presented) The method as defined in Claim 1, wherein each said validation rule has an identity that is selected from the group consisting of:

10 the identity is based on a part of a schema governing a node of the corresponding coupled portion;

the identity is written in script and associated with a node of the corresponding coupled portion; and

15 the identity is written in a declarative syntax and associated with a node of the corresponding coupled portion.

11. (Previously Presented) The method as defined in Claim 1, wherein:

each said validation rule includes an alert area display and the indicia comprises the alert area display; and

20 the act of validating comprises using one said validation rule to determine that the data input from the user into a corresponding said data-entry field is invalid; and

the act of outputting indicia outputs the corresponding alert area display so as to be associated with the corresponding said data-entry field.

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12. (Original) The method as defined in Claim 11, wherein when the alert area display is output, the output includes one or more characteristics selected from the group consisting of:

- graphics surrounding the corresponding said data-entry field;
- 5 the alert area display surrounds the corresponding said data-entry field;
- the alert area display includes graphics containing a red, dashed-lined box;
- the alert area display includes graphics highlighting the data in the corresponding said data-entry field;
- the alert area display surrounds the corresponding said data-entry field and
- 10 includes the graphics containing a squiggly line beneath the data in the corresponding said data-entry field;
- the alert area display includes text containing information about the invalid data in the corresponding said data-entry field;
- the alert area display includes text containing information about the
- 15 corresponding said data-entry field; and
- the alert area display includes a pop-up window.

13. (Previously Presented) The method as defined in Claim 1, wherein each coupled portion comprises a node that has one or more of the validation rules

20 associated therewith.

14. (Previously Presented) The method as defined in Claim 1, wherein one said validation rule includes a requirement that is selected from the group consisting of:

the data received by input from the user into a corresponding said data-entry field is to be numerical;

the data received by input from the user into a corresponding said data-entry field is to be textual; and

the data received by input from the user into a corresponding said data-entry field is to reference another coupled portion in the XML document.

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Previously Presented) The method as defined in Claim 1, wherein each said validation rule includes:

an alert area display; and

how the alert area display is to appear when output.

19. (Original) The method as defined in Claim 1, wherein the PI includes a character string of “mso-InfoPathSolution”.

20. (Previously Presented) A computer-readable storage medium comprising instruction that, when executed by a computer, performs the method of Claim 1.

21. (Previously Presented) A method comprising:
receiving an instruction to open an XML document;
searching the XML document to locate a processing instruction (PI) having
a name;

5 discovering a solution using the name in the PI;
 opening the XML document with the solution, wherein:

 the solution includes an XSLT presentation application and an XML
 schema;

 the XML document can be inferred from the XML schema; and
10 portions of the XML document are logically coupled with fragments
 of the XML schema;

 executing the XSLT presentation application to render an HTML electronic
form containing data-entry fields associated with the coupled portions;

 receiving, through one or more of the data-entry fields, data input by a user;

15 validating the data input by the user with one or more of a plurality of
validation rules, each of the one or more plurality of validation rules
corresponding to one of said data-entry fields through which data is input by the
user, each said validation rule:

 mapping to each said validation rule's corresponding said data-entry
20 field by use of an entity selected from the group consisting of: an XPath
expression; a declarative syntax; and an entity that is script-based; and

 mapping to said coupled portion to which each said validation rule's
corresponding said data-entry field is associated, the mapping with an
entity selected from the group consisting of: an XPath expression; an event
25 handler; an event handler that determines when a real-time validation tool
uses said validation rule; an event handler that determines when a real-time
validation tool uses said validation rule before data received for said
coupled portion is held by the XML document; and an event handler that
determines when a real-time validation tool uses said validation rule after

data received for said coupled portion is held by the XML document, and
if the act of validating determines that the data input by the user is invalid,
outputting indicia informing the user that the data input is invalid.

5 **22.** (Original) The method as defined in Claim 21, wherein one or more of the
receiving, the searching, the examining, the opening, and the executing of the
XSLT presentation application are performed by the execution of an HTML
electronic forms application that is different from the application used to create the
HTML electronic form.

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23. (Previously Presented) The method as defined in 21, wherein the data-
entry fields of the HTML electronic form map to a corresponding plurality of
nodes in said couple portions of the XML document; and the data input is input for
storage in a corresponding said node in the XML document, and

15 further comprising outputting data in XML for viewing by the user in the
HTML electronic form through the data-entry fields via the mapping of the data-
entry fields from corresponding said nodes in said couple portions of the XML
document.

20 **24.** (Original) The method as defined in Claim 21, wherein the PI includes a
character string of “mso-InfoPathSolution”.

25. (Previously Presented) A computer-readable storage medium comprising
instruction that, when executed by a computer, performs the method of Claim 21.

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26. (Previously Presented) A method comprising:

- receiving an instruction to open an XML document;
- searching the XML document to locate a processing instruction (PI) having a target that includes a character string that identifies an application used to create
- an HTML electronic form associated with the XML document;
- discovering a solution using the character string;
- opening the XML document with the solution, wherein:
 - the solution includes an XSLT presentation application and an XML schema;
 - the XML document can be inferred from the XML schema; and
 - portions of the XML document are logically coupled with fragments of the XML schema;
 - executing the XSLT presentation application to render the HTML electronic form containing data-entry fields associated with the coupled portions;
 - receiving, through one or more of the data-entry fields, data input by a user;
 - validating the data input by the user with one or more of a plurality of validation rules, each of the one or more plurality of validation rules corresponding to one of said data-entry fields through which data is input by the user, each said validation rule:
 - mapping to each said validation rule's corresponding said data-entry field by use of an entity selected from the group consisting of: an XPath expression; a declarative syntax; and an entity that is script-based; and
 - mapping to said coupled portion to which each said validation rule's corresponding said data-entry field is associated, the mapping with an entity selected from the group consisting of: an XPath expression; an event handler; an event handler that determines when a real-time validation tool uses said validation rule; an event handler that determines when a real-time validation tool uses said validation rule before data received for said coupled portion is held by the XML document; and an event handler that

determines when a real-time validation tool uses said validation rule after data received for said coupled portion is held by the XML document, and if the act of validating determines that the data input by the user is invalid, outputting indicia informing the user that the data input is invalid.

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27. (Previously Presented) The method as defined in 26, wherein the data-entry fields of the HTML electronic form map to a corresponding plurality of nodes in said coupled portions of the XML document; and the data input is input for storage in a corresponding said node in the XML document, and

10 further comprising outputting data in XML for viewing by the user in the HTML electronic form through the data-entry fields via the mapping of the data-entry fields from corresponding said nodes in said coupled portions of the XML document.

15 **28.** (Original) The method as defined in Claim 26, wherein the character string is “mso-InfoPathSolution”.

29. (Original) The method as defined in Claim 26, wherein one or more of the receiving, the searching, the examining, the discovering, the opening, and the
20 executing of the XSLT presentation application are performed by the execution of an HTML electronic forms application that is different from the application used to create the HTML electronic form.

30. (Previously Presented) The method as defined in Claim 26, wherein:
25 the discovering a solution comprises discovering the character string in a URL.

31. (Previously Presented) The method as defined in Claim 26, wherein
the character string comprises a URL having a path with a suffix that is
selected from the group consisting of “.xsf” or “.xsn”.

5 **32.** (Previously Presented) A computer-readable storage medium comprising
instruction that, when executed by a computer, performs the method of Claim 26.

33. (Previously Presented) A method comprising:

receiving an instruction to open an XML document;

10 searching the XML document to locate a processing instruction (PI) having
at least one of a PI version and a product version;

discovering a solution using a name associated with the PI version or the
product version;

opening the XML document with the solution, wherein:

15 the solution includes a XSLT presentation application and a XML
schema;

the XML document can be inferred from the XML schema; and

portions of the XML document are logically coupled with fragments
of the XML schema;

20 executing the XSLT presentation application to render an HTML electronic
form containing data-entry fields associated with the coupled portions;

receiving, through one or more of the data-entry fields, data input by a user;

validating the data input by the user with one or more of a plurality of
validation rules, each of the one or more plurality of validation rules
25 corresponding to one of said data-entry fields through which data is input by the
user, each said validation rule:

mapping to each said validation rule's corresponding said data-entry
field by use of an entity selected from the group consisting of: an XPath
expression; a declarative syntax; and an entity that is script-based; and

mapping to said coupled portion to which each said validation rule's corresponding said data-entry field is associated, the mapping with an entity selected from the group consisting of: an XPath expression; an event handler; an event handler that determines when a real-time validation tool uses said validation rule; an event handler that determines when a real-time validation tool uses said validation rule before data received for said coupled portion is held by the XML document; and an event handler that determines when a real-time validation tool uses said validation rule after data received for said coupled portion is held by the XML document, and if the act of validating determines that the data input by the user is invalid, outputting indicia informing the user that the data input is invalid.

34. (Original) The method as defined in Claim 33, wherein one or more of the receiving, the searching, the examining, the discovering, the opening, and the executing of the XSLT presentation application are performed by the execution of an HTML electronic forms application that is different from the application used to create the HTML electronic form.

35. (Previously Presented) The method as defined in Claim 33, wherein the data-entry fields of the HTML electronic form map to a corresponding plurality of nodes in said coupled portions of the XML document; and the data input is input for storage in a corresponding said node in the XML document, and

further comprising outputting data in XML for viewing by the user in the HTML electronic form through the data-entry fields via the mapping of the data-entry fields from corresponding said nodes in said coupled portions of the XML document.

36. (Previously Presented) A computer-readable storage medium comprising instruction that, when executed by a computer, performs the method of Claim 33.

37. (Previously Presented) A method comprising:

5 receiving an instruction to open an XML document;
searching the XML document to locate a processing instruction (PI);
discovering a solution using a name in the PI;
opening the XML document with the solution, wherein:

10 the solution includes or indicates an XSLT presentation application
and an XML schema;

the XML document can be inferred from the XML schema; and
portions of the XML document are logically coupled with fragments
of the XML schema;

15 executing the XSLT presentation application to render an HTML electronic
form containing data-entry fields associated with the coupled portions;

receiving, through one or more of the data-entry fields, data input by a user;
validating the data input by the user with one or more of a plurality of
validation rules, each of the one or more plurality of validation rules
corresponding to one of said data-entry fields through which data is input by the
20 user, each said validation rule:

mapping to each said validation rule's corresponding said data-entry
field by use of an entity selected from the group consisting of: an XPath
expression; a declarative syntax; and an entity that is script-based; and

25 mapping to said coupled portion to which each said validation rule's
corresponding said data-entry field is associated, the mapping with an
entity selected from the group consisting of: an XPath expression; an event
handler; an event handler that determines when a real-time validation tool
uses said validation rule; an event handler that determines when a real-time
validation tool uses said validation rule before data received for said

coupled portion is held by the XML document; and an event handler that determines when a real-time validation tool uses said validation rule after data received for said coupled portion is held by the XML document, and if the act of validating determines that the data input by the user is invalid,
5 outputting indicia informing the user that the data input is invalid.

38. (Original) The method as defined in Claim 37, wherein one or more of the receiving, the searching, the discovering, the opening, and the executing of the XSLT presentation application are performed by the execution of an HTML
10 electronic forms application that is different from the application used to create the HTML electronic form.

39. (Previously Presented) The method as defined in 37, wherein the data-entry fields of the HTML electronic form map to a corresponding plurality of
15 nodes of said coupled portions of the XML document; and the data input is input for storage in a corresponding said node in the XML document, and further comprising outputting data in XML for viewing by the user in the HTML electronic form through the data-entry fields via the mapping of the data-entry fields from corresponding said nodes of said coupled portions of the XML
20 document.

40. (Previously Presented) A computer-readable storage medium comprising instruction that, when executed by a computer, performs the method of Claim 37.

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41. (Previously Presented) A computer-readable storage medium including instructions that, when executed by a computer, perform acts comprising:

receiving an instruction to open an XML document;

searching the XML document to locate a processing instruction (PI) that
5 contains an entity selected from the group consisting of:

a href attribute that points to a URL;

a name;

a target that includes a character string that identifies an application
used to create an HTML electronic form associated with the XML
10 document; and

a href attribute and at least one of a PI version and a product version;

discovering a solution using the entity in the PI;

opening the XML document with the solution, wherein:

the solution includes or indicates an XSLT presentation application
15 and an XML schema;

the XML document can be inferred from the XML schema; and

portions of the XML document are logically coupled with fragments
of the XML schema;

executing the XSLT presentation application to transform the coupled
20 portions of the XML document into an HTML electronic form containing data-
entry fields associated with the coupled portions;

receiving, through one or more of the data-entry fields, data input by a user;

validating the data input by the user with one or more of a plurality of
validation rules, each of the one or more plurality of validation rules
25 corresponding to one of said data-entry fields through which data is input by the
user, each said validation rule:

mapping to each said validation rule's corresponding said data-entry
field by use of an entity selected from the group consisting of: an XPath
expression; a declarative syntax; and an entity that is script-based; and

mapping to said coupled portion to which each said validation rule's corresponding said data-entry field is associated, the mapping with an entity selected from the group consisting of: an XPath expression; an event handler; an event handler that determines when a real-time validation tool uses said validation rule; an event handler that determines when a real-time validation tool uses said validation rule before data received for said coupled portion is held by the XML document; and an event handler that determines when a real-time validation tool uses said validation rule after data received for said coupled portion is held by the XML document, and if the act of validating determines that the data input by the user is invalid, outputting indicia informing the user that the data input is invalid.

42. (Original) The computer-readable medium as defined in Claim 41, wherein one or more of the acts are performed by the execution of an HTML electronic forms application that is different from the application used to create the HTML electronic form.

43. (Previously Presented) The computer-readable medium as defined in Claim 41, wherein the discovering a solution using the entity in the PI comprises:

- (i) discovering the solution using the URL in the PI;
 - (ii) discovering the solution using a name associated with the href attribute;
- or
- (iii) discovering the solution using a name in the PI that is associated with the href attribute.

44. (Previously Presented) The computer-readable medium as defined in Claim 41, wherein the data-entry fields of the HTML electronic form map to a corresponding plurality of nodes of said coupled portions of the XML document; and the data input is input for storage in a corresponding said node in the XML document, and

further comprising outputting data in XML for viewing by the user in the HTML electronic form through the data-entry fields via the mapping of the data-entry fields from corresponding said nodes of said coupled portions of the XML document.

45. (Original) The computer-readable medium as defined in Claim 41, wherein the character string is “mso-InfoPathSolution”.